Klamath Network Featured Creature
December 2010

Land Snails
Phylum Mollusca, Class Gastropoda

FIELD NOTES:

General Description:

Snails are the familiar, soft-bodied animals that live in a coiled shell of their own making. Most familiar, especially to garden enthusiasts, may be the pest (*Helix aspersa*), introduced from Europe, where it is commonly eaten by people. There are also many native land snails in the Pacific Northwest where they play an important role in ecosystems.

Taxonomy and Diversity

About 350 molluscs are known from the Pacific Northwest forests, and almost half of these are land snails and slugs (snails with vestigial shells). Snails are placed within the class Gastropoda, the largest taxonomic class of molluscs. The class contains a vast number of species, second in diversity only to insects. Most gastropods are marine, while many are freshwater inhabitants. Terrestrial species' richness is highest in moist regions like the Pacific Northwest. Many land snails are narrowly endemic, for example, to one watershed. With more surveys, it is believed that the number of species known to occur in the Pacific Northwest may double.

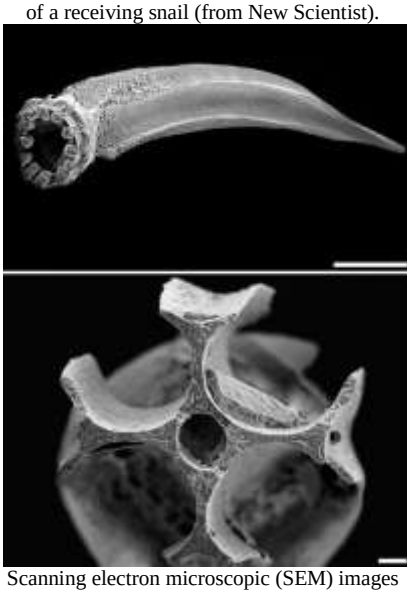
Habitat:

Land snails may occupy many habitats, from moist forested areas, where they are common, to dry shrublands, where they are not common.

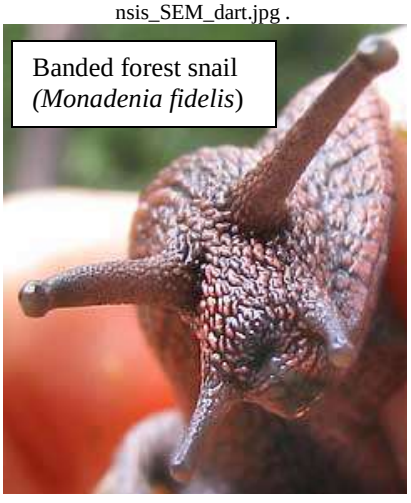
Anatomy

The distinctive features of the land snail are the 4 tentacles and the shell. The shell is one piece and coiled. The species native to the Pacific Northwest typically have flattened shells in comparison with *Helix*. The shell usually opens on the right side of the coil (when viewed with the opening pointing upward). Many species can close the opening with an operculum, which can prevent desiccation. Land snails have a respiratory pore and lungs for breathing.

A love dart which has pierced throuh the head of a receiving snail (from New Scientist).



Scanning electron microscopic (SEM) images love-dart of *Cepaea hortensis*. Upper image is side view, 0.5 mm. Lower image is cross-section. From: http://en.wikipedia.org/wiki/File:Cepaea_hortensis_SEM_dart.jpg .



Banded forest snail (*Monadenia fidelis*)

Reproduction:

Land snails are typically hermaphroditic (have both male and female organs).The mating of snails has been described as "the most complete merging I know in nature[1]". Two individuals arrange themselves so that the male part of one is opposite the female part of the other, and then each ejects male sperm into the female opening of the other. This merging may take minutes to hours. After fertilization, eggs are laid. In a few species, self-fertilization occurs; an individual mates with itself and produces offspring. Many species of land snails, such as *Helix* spp., produce a fascinating apparatus called a love dart (Figures 1-2). The love dart is forcefully stabbed through the skin of the mating partner during courtship, before sperm transfer, causing the darted snail to become more active. The love dart also inhibits digestion of the sperm of the mate, enhancing outcrossing. It is said that the love dart in snails may be the source of Cupid in Greek Mythology.

Behavior and Diet:

The snail glides along over mucus it secretes, using the muscular contractions of its foot. The mouth, in contact with the surface being traversed, contains a tough muscular radula with rows of minute, pointed teeth. The radula rasps back and forth over live or dead vegetative matter to break it into tiny pieces to swallow. This helps convert leaf litter and down wood into humus.

Where to See It in the Klamath Parks:
Land snails occur in all parks.

More Information

http://en.wikipedia.org/wiki/Portal:Gastropods

[1] Robert Michael Pyle. *Wintergreen: Rambles in a Ravaged Land*. Sasquatch Books, Seattle.